

Introduction

1. Define the following:
 - Data structures
 - Algorithms
2. What is the difference between linear and non-linear data structure? Give some examples of each type.
3. Differentiate between the following
 - Sequential access and random access linear data structures
 - Hierarchical and grouped non-linear data structures
4. A computer program is designed to repeatedly ask the user to enter a student name. When the user enters a name, the student is added to the current class. If the entered student name is "CLASS" the program starts adds the following student to a new class and display the number of student entered for the last class. This process continues until the user enters a student named "END".
Draw the flowchart for the algorithm
5. Draw the flow chart that express the following pseudo-code

initialize passes to zero

initialize failures to zero

initialize student to one

while student counter is less than or equal to ten

 input the next exam result
 if the student passed
 add one to passes

 else

 add one to failures

add one to student counter

print the number of passes

print the number of failures